

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : ANELVA CORP

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(72)Inventor : TSUKADA TSUTOMU
TAMAKI TOSHIO
YOSHIDA TATSUHIKO

(54) DRY ETCHING DEVICE

(57)Abstract:

PURPOSE: To improve the uniformity and reproducibility of etching by impressing a negative voltage on a high-frequency impressing electrode obtained by assembling a substrate holder and a dielectric member in a specified manner in the title device using a high-frequency glow discharge.

CONSTITUTION: Plural substrate holders 4 having a protrusion and made of A are provided on the high-frequency impressing electrode 2 in a vacuum vessel 1, and the top of the protrusion of the holder is covered with a substrate 9 having a larger area than the top. The bottom of the holder 4 is brought into contact with the electrode 2, or the surface other than the bottom is covered with a polyimide film. The surface of the electrode 2 out of contact with the holder 4 is covered with first and second dielectric covers 6 and 7, and the covers 6 and 7 and holder 4 are made freely attachable to and detachable from the electrode 2. A dielectric ring 8 is inserted around the shoulder of the protrusion of the holder 4, and the part projecting from the holder 4 on the back of the substrate 9 is placed thereon.

By such a constitution, plasma 10 cannot be seen from the electrode 2 through the gaps formed by assembling. A negative DC voltage having a larger absolute value than that of the negative self-bias voltage caused by a plasma discharge produced when a high-frequency voltage is impressed is impressed on the electrode 2 through a high frequency filtering coil 18 and a capacitor 19.

